

METHOD AND APPARATUS FOR DETERMINING SPEED AND PROPERTIES OF FLOWING FLUIDS USING NMR MEASUREMENTS

Abstract

A method for determining a property of a flowing fluid by nuclear magnetic resonance includes applying a static magnetic field to the flowing fluid; acquiring a suite of nuclear magnetic resonance measurements on the flowing fluid using a pulse sequence comprising a spoiling pulse, a wait time, and an acquisition pulse sequence, wherein the suite of nuclear magnetic measurements have different values for the wait time; and fitting the suite of nuclear magnetic resonance measurements to a forward model for responses of the flowing fluid to derive a parameter selected from a flow speed, longitudinal relaxation times of the flowing fluid, and a combination thereof.